Pleuraphis jamesii Herbaceous Vegetation

MAP CLASS	Galleta Grassland
COMMON NAME	Galleta Herbaceous Vegetation
PHYSIOGNOMIC CLASS	Herbaceous Vegetation (V.)
PHYSIOGNOMIC SUBCLASS	Perennial graminoid vegetation (V.A.)
PHYSIOGNOMIC GROUP	Temperate or subpolar grassland (V.A.5.)
PHYSIOGNOMIC SUBGROUP	Natural/Semi-natural (V.A.5.N.)
FORMATION	Short sod temperate or subpolar grassland (V.A.5.N.e.)
ALLIANCE	*Pleuraphis jamesii* Herbaceous Alliance

CLASSIFICATION CONFIDENCE LEVEL Moderate

USFS WETLAND SYSTEM Upland

RANGE

Wupatki National Monument

Galleta Herbaceous Vegetation is one of the most common associations within the project boundaries. This association was found from our relevé data at Wupatki NM in the southeastern section of the park west of the Little Colorado River, along Crack-in-rock Road, on Antelope Prairie, Woodhouse Mesa, Doney Mountain, White Mesa, and near Wupakti and Wukoki Ruins. This association was also found on Babbitt Ranch land on top of White Mesa, adjacent to the Babbitt Ranch houses and along the Lomatki Ruins service road.

Globally

This widespread grassland association is found on alluvial flats, plateau parks and plains in the Colorado Plateau and elsewhere in the southwestern U.S.

ENVIRONMENTAL DESCRIPTION

Wupatki National Monument

This association occurs over a wide range of elevations and slopes within the park and the environs ranging from 4,364-5,446 ft (1,330-1,660 m) elevation (average 5,069 ft/1,545 m) and 0-65% slope (average 16%). Its substrate included different geologic formations within the parks remnant lava flow and basaltic cobbles, black and red cinders, relic Pleistocene river cobbles, sandstone, sand, and clay soils.

Globally

This widespread grassland association is found on alluvial flats, plateau parks and plains in the Colorado Plateau and elsewhere in the southwestern U.S. Elevation ranges from 4,003-5,446 ft (1,220-1,660 m). Landforms vary from mesa tops, slopes, and basin floors. Stands may be small woodland parks or more extensive on the plains. Soils are variable. In bottomland stands soils tend to be fine-textured; however, stands also occur on sandy loams derived from sandstone, remnant lava flow, basaltic cobbles, black or red cinders, or alluvium derived from relic Pleistocene river cobbles, sandstone, sand, or clay soils.

MOST ABUNDANT SPECIES

Wupatki National Monument

Stratum	Species
Herbaceous	*Pleuraphis jamesii*

Globally

Stratum	Species
Herbaceous	*Pleuraphis jamesii*

ASSOCIATED SPECIES

Wupatki National Monument

Aristida havardii, Aristida purpurea, Artemisia dracunculus, Atriplex canescens, Bouteloua eriopoda, Brickellia oblongifolia, Dasyochloa pulchella, Elymus elymoides, Ephedra torreyana, Ephedra viridis, Ericameria nauseosus,

Fallugia paradoxa, Gutierrezia sarothrae, Hesperostipa comata, Muhlenbergia porteri, Sporobolus airoides, Zinnia grandiflora

Globally
Aristida spp., *Achnatherum hymenoides, Bouteloua eriopoda, Bouteloua gracilis, Hesperostipa comata, Muhlenbergia porteri, Sporobolus airoides*, *Sporobolus cryptandrus, Plantago* sp., *Gilia* sp., *Lappula* sp., *Zinnia* sp., *Opuntia* sp. *Artemisia filifolia, Atriplex canescens, Atriplex confertifolia, Brickellia oblongifolia, Ephedra torreyana, E. viridis, Ericameria nauseosa, Fallugia paradoxa, Gutierrezia* spp., *Tetradymia* spp., *Juniperus monosperma*

VEGETATION DESCRIPTION
Wupatki National Monument
Galleta Herbaceous Vegetation total vegetation cover ranged from 16-65% absolute cover (average 40%) with 1-10% (average 4%) in the shrub layer and 11-61% (average 36%) in the herbaceous layer. Diversity ranged from low (2) to high (17) species (average 10) within the 15 relevés sampled.

The shrub layer is not dominated by a single species; however, the most consistent shrubs species were *Ericameria nauseosa* with 0-3% absolute cover (average 1%) and *Atriplex canescens* with 0-10% absolute cover (average 1%). In the herbaceous layer *Pleuraphis jamesii* is the dominant understory species with absolute cover ranging from 10-55% (average 32%).

Globally
This association is characterized by a relatively sparse to moderately dense perennial herbaceous layer (10-60% cover) that is strongly dominated by the warm-season bunchgrass *Pleuraphis jamesii*. Low cover of other grasses such as *Aristida* spp., *Achnatherum hymenoides, Bouteloua eriopoda, Bouteloua gracilis, Hesperostipa comata, Muhlenbergia porteri, Sporobolus airoides*, or *Sporobolus cryptandrus* may be present. Forb cover is usually sparse and includes species of *Plantago, Gilia, Lappula, Zinnia,* and prickly pear cacti (*Opuntia* spp.). Many species of shrubs and dwarf-shrubs may be present, but they are not abundant enough to form a shrub layer. Woody species may include *Artemisia filifolia, Atriplex canescens, Atriplex confertifolia, Brickellia oblongifolia, Ephedra torreyana, E. viridis, Ericameria nauseosa, Fallugia paradoxa, Gutierrezia* spp., *Tetradymia* spp., and occasional *Juniperus monosperma* trees. The widespread introduced annual grass *Bromus tectorum* and several other exotic species like *Salsola kali, Bassia scoparia (= Kochia scoparia),* and *Sisymbrium altissimum* may be present to abundant, especially on disturbed sites. Some stands have high cover of cryptogams on the soil including *Collema tenax, Tortula ruralis, Bellia papillata*, and *Fulgensia bracteata*.

CONSERVATION RANK G2G4

DATABASE CODE CEGL001777

MAP CLASSES
Galleta Herbaceous Vegetation is represented by map class Galleta Grassland (map code 10).

The total area mapped within Wupatki NM is 62 ac (25 ha) within 24 polygons and the total area in the park environs is 583 ac (236 ha) within 94 polygons.

COMMENTS
Globally
This association is defined by the dominance of *Pleuraphis jamesii* in the graminoid layer without codominance of other grass species or the presence of a shrub layer.

DYNAMICS
Pleuraphis jamesii is both drought- and grazing-resistant (USFS 1937, Weaver and Albertson 1956, West et al. 1972). This grass is favored in mixedgrass stands because it is only moderately palatable to livestock; however, it decreases when heavily grazed during drought and in the more arid portions of its range where it is the dominant grass (West et al. 1972). This grass reproduces extensively from scaly rhizomes. These rhizomes make the plant

resistant to trampling by livestock and have good soil binding properties (USFS 1937, Weaver and Albertson 1956, West et al. 1972).

REFERENCES

Bourgeron and Engelking 1994, Cannon 1960, Collins 1984, Driscoll et al. 1984, Francis 1986, Francis and Aldon 1983, Helm 1981, Kleiner 1968, Kleiner 1983, Kleiner and Harper 1972, Kleiner and Harper 1977, Marr et al. 1973, Nichol 1937, Stewart et al. 1940, USFS 1937, Utah Environmental and Agricultural Consultants 1973, Von Loh et al. 2002, Weaver and Albertson 1956, West et al. 1972